Work Order I Wednesday, August 2	D 105834		*105	834*						Page 1
Item ID: D31	90-1		Accept	*N900	040	100)* s	etup Sta	rt *N	S1*
Revision ID: Item Name: Chaf	ffing Shield	,37						Sto		S2*
Start Date: 8/21	/2013 Start Qty:	/	•	Cust Item I	D:					
Required Date: 8/28	3/2013 Req'd Qty:			Customer:						
Reference:		• • • • • • • • • • • • • • • • • • • •					÷			
Approvals: Pro	ocess Plan:	Date: 13-08-	Z/ Tooling:	D:	ate:		R	tun Sta Sto	1/1	R1*
QC	C:	Date:	SPC (Y/N):	Da	ate:			510	^ʰ *N	R2*
Sequence ID/ Work Center ID	Operation Description		Set Up/ Run Hours	Tool ID		Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr									
D3190	Rev A									
100			0.00		· · · · · · · · · · · · · · · · · · ·					
100			0.00				40	٥	-	JM13-09-27
Waterjet FLOW CNC Waterjet		emo IT AS PER DWG .	0.00							
304 24 GA	עת	VG REV: A OG REV: A								
105	QC2- Inspect pa	arts off machine FAI/FAIB	0.00							
105							40			Jm13-09-27
QC	Me	emo	0.00							
Quality Control										,
106	QC8- Inspect pa	arts - second check	0.00 DAS				4		1	
<u>*106*</u>			9-89	_			40			
QC Ouality Control	Me	emo	0.00 B 9	27			• -			

Quality Control

											DQA:	Ud	_	
es /	No				WORK ORDER NON-O	100	NFORM	MANCE / UP	DATE		OA Closed:		te.	
ar.	Age (Age)			,	DISPOSITION				AGAINST D	_			tc.	
Part No. NCR No.				Rework Scrap Use-as-is Work Order Update	Machining Small Fab Thermoforming Finishing				Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier			Engineering Quality Other		
				Descri	ption of work order update	Π	Initial	Act	tion		Sign &	# 1 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4		
Da	te S	tep	Qty		or Non-conformance	Ct	nief Eng	Desc	ription		Date	Verificatio	n	QC Inspector
						AUI	LT CATE	GORY						
Bending Centre Not Concentric to O/S Cracks Broken/Damaged Crushed/Crimped Burrs Contamination Heat Treat Inspection Strip in Tube Bend Bom/Route Broken/Damaged Com/Route Broken/Damaged Com/Contamination Countersink Cut Too Short			Inspecti Instruct Mainte Mislabe Misread	on incomplete ions incomplete/i nance . led	Unclear		Over/Under Part Incorrec Part Lost/Mis Part Moved Positioned W	ct ssing Vrong		Pressure/Forced Temperature/Cure Weld Wrong Stock Pulled Other				
	ng Gear Bend Crack Crusk Cuffs Heat Inspe	Date S Date S Date S Date S Date S Crushed/Crir Cuffs Heat Treat Inspection St	Date Step Date Step Date Step Date Step Date Step Crushed/Crimped Cuffs Heat Treat	Date Step Qty Date Step Oty Date Step Oty Region	Date Step Oty Date Step Oty Descri Date Step Oty Descri Consequence of the step of th	DISPOSITION Rework Scrap Use-as-is Work Order Update Date Step Oty Description of work order update or Non-conformance Bending Gear General Bending Centre Not Concentric to O/S BOM/Route Cracks Broken/Damaged Crushed/Crimped Burrs Cuffs Contamination Cuffs Contamination Countersink Inspection Strip in Tube Cut Too Short	DISPOSITION Rework Scrap Use-as-is Work Order Update Date Step Qty Description of work order update or Non-conformance Characteristics of the service of	DISPOSITION Rework Scrap Use-as-is Work Order Update Initial Chief Eng Date Step Qty Description of work order update Chief Eng Date Step Qty Or Non-conformance Chief Eng FAULT CATE Gear General Bending Bend Grain Centre Not Concentric to O/S BOM/Route Hardwa Cracks Broken/Damaged Inspection Crushed/Crimped Burrs Instruct Cuffs Contamination Mainte Heat Treat Countersink Mislabe Inspection Strip in Tube Cut Too Short Misread	DISPOSITION Rework Scrap Wachining Thermoforming Large Fab Date Step Qty Description of work order update or Non-conformance FAULT CATEGORY General Bending General Bend Grain Hardware Centre Not Concentric to O/S BOM/Route Hardware Crushed/Crimped Gracks Broken/Damaged Inspection Incomplete Instructions Incomplete/Cuffs Contamination Maintenance Heat Treat Countersink Mislabeled Misread	DISPOSITION Rework Skid-tube Crosstube Machining Small Fab Thermoforming Finishing Large Fab Composite	DISPOSITION Rework Scrap Machining Small Fab Large Fab Composite Date Step Qty Description of work order update Initial Action Chief Eng Description Date Step Qty Order Update Orde	DISPOSITION Rework Scrap Use-as-is Use-as-is	DISPOSITION Rework Scrap Use-as-is Work Order Update Date Step Qty Or Non-conformance Centre Not Concentric to O/S Bending Centre Not Concentric to O/S Cracks Broken/Damaged Centre Not Concentric to O/S Bowley Contamination Cuffs Cuffs Contamination Cuffs Cuffs Contamination Contenting Control Strip in Tube Cuff Countersink Inspection Strip in Tube Cuff Countersink Inspection Strip in Tube Cuff Countersink Inspection Strip in Tube Cufford Washed Cuffs	Disposition Rework Scrap Use-as-is Work Order Update Date Date Step Qty Description of work order update Or Non-conformance Date FAULT CATEGORY Bending Centre Not Concentric to O/S BOM/Route Bends Coracks Cracks Cracks Broken/Damaged Contamination Countersink Instructions Incomplete Part Incorrect Part Instructions Incomplete Part Incorrect Part Instructions Incomplete Provinced Part Moved Part Instructions Incomplete Part Incorrect Part Moved Part Moved Part Moved Part Moved Part Instructions Incomplete Part Moved Part Moved Part Moved Part Instructions Incomplete Part Moved Part Mo

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drawing

Finish

Work Order ID 105834

Packaging

Packaging

105834

Page 2

Wednesday, August 21, 2013 11:41:39 AM D3190-1 Item ID: Accept *N900040100* Setup Start **Revision ID:** n 3 1 90 - 1 Item Name: Chaffing Shield *10* **Start Date:** 8/21/2013 **Start Qty: 10.00 Cust Item ID:** Required Date: 8/28/2013 Req'd Qty: 10.00 Customer: Reference: . Start Run Approvals: Process Plan: ______ Date: _____ Tooling: Date: Stop Date: SPC (Y/N): Date: Sequence ID/ Operation Set Up/ Reject **Tool ID** Tool # Plan Accept Reject Insp. **Work Center ID** Description Qty Number Stamp **Run Hours** Code 107 0.00 **SHEAR** *107* Small Fab 0.00 Memo Small Fab Roll as per Dwg D3190 110 QC5- Inspect part completeness to step on W/O 0.00 *110* 13.10-01 QC 0.00 Memo Quality Control Identify as per dwg & Stock Location: L453 120 0.00 *120*

0.00

Memo

						,					DQA:	Date	: :
NCR:	⁄es	/ No				WORK ORDER NON-O	100	NFORM	MANCE / UPI	DATE		•	
											QA Closed:	Date):
Work Orde	er:					DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
Part No. NCR No.				Rework Scrap Use-as-is Work Order Update	Skid-tube Crosstube Machining Small Fab Thermoforming Finishing Large Fab Composite		Water Jet Prod. Eng. Coor. Rec/Store/Packaging Supplier		Engineering Quality Other				
Root			I		Descri	ption of work order update		nitial	Act	ion	Sign &		
Cause		Date	Step	Qty		or Non-conformance		ief Eng		ription	Date	Verification	QC Inspector
Doc/Data			Осор	~.,			1						
Equip/Tooling	П												
Operator													
Material													
Setup													
Other													
Process													
Supplier													
Training													
Unapproved													
						F	AUL	T CATE	GORY				
Landi	ng G	ear	*		·	General				_	,	_	_
	Ш	Bending				Bend		Grain			Ovalized	L	Pressure/Forced
		Centre No	ot Conce	ntric to	o/s	BOM/Route	L	Hardwa	re		Over/Under	tolerance	Temperature/Cure
		Cracks				Broken/Damaged	_	1	on incomplete		Part Incorred	⊢	Weld
,	\vdash	Crushed/	Crimped			Burrs		1	ions Incomplete/l	Jnclear	Part Lost/Mi	ssing	Wrong Stock Pulled
	-	Cuffs				Contamination	<u>_</u>	Mainte			Part Moved		
	\vdash	Heat Trea				Countersink	<u></u>	Mislabe			Positioned V	· -	7
	-	Inspectio		Tube	<u> </u>	Cut Too Short	L	Misread	1		Power Loss/	Surge	Other
]	Щ	Ripples in				Drill Holes	<u></u>	Offset					
Torque Waves in Extrusion Drawing				Out of C	Calibration								

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Finish

Work Order ID 105834 *105834* Page 3 Wednesday, August 21, 2013 11:41:39 AM Item ID: D3190-1 Accept *N900040100* Setup Start **Revision ID:** Stop Chaffing Shield Item Name: **Start Qty: 10.00** *10* **Start Date:** 8/21/2013 **Cust Item ID:** Required Date: 8/28/2013 Req'd Qty: 10.00 *10* **Customer:** Reference: Run Process Plan: Date: Approvals: Tooling: Date: Stop Date:_____ SPC (Y/N): Date: Sequence ID/ Operation Reject Set Up/ Tool ID Tool # Plan Accept Reject Insp. **Work Center ID** Description **Run Hours** Code Qty Number Stamp 130 QC21- Final Inspection - Work Order Release 0.00

0.00

Memo

130

Quality Control

QC

pl 13-10-4

												DQA:	Da	ate:	
NCR:	Yes	/ No				WORK ORDER NON-	COI	NFORM	MANCE / UP	DATE		QA Closed:	D:	ate:	
						DISPOSITION				AGAINS	T DE	PARTMENT/		ate.	
Work Ord	er:						_					, NOCESS			
				,		Rework]		Skid-tube	Crosstut	эе 🔃		Water Je		Engineering
Part No.				Scrap	_		Machining	Small Fa			d. Eng. Coor	-	Quality		
					Use-as-is	1	1	noforming	Finishir	-	. Rec/Stor	e/Packaging		Other	
NCR No.				Work Order Update	e Large Fab Composite			te		Supplie	r[
Root Des					Descri	ption of work order update Initial Action			Sign &						
Cause		Date	Step	Qty	(or Non-conformance	Cr	nief Eng	Desc	cription		Date	Verification	on	QC Inspector
Doc/Data															
Equip/Tooling									į						
Operator										•					
Material			1												
Setup			ļ												
Other			1							•					
Process			1						,						·
Supplier					•				,						
Training						.s e - ′			al distribution						
Unapproved															
						F	AUI	LT CATE	GORY						
Land	ing (Gear				General		-				1		_	•
	_	Bending				Bend	_	Grain			\perp	Ovalized		\perp	Pressure/Forced
	L	Centre N	ot Concer	ntric to (D/S	BOM/Route		Hardwa	re		_	Over/Under	tolerance	<u> </u>	Temperature/Cure
]	Cracks Broken/Dan			Broken/Damaged		Inspecti	on Incomplete	•	<u> </u>	Part Incorred	:t	L	Weld		
	\vdash	Crushed/	Crimped		<u></u>	Burrs .		-1	ions Incomplete	/Unclear		Part Lost/Mi	ssing	L	Wrong Stock Pulled
		Cuffs				Contamination	1_	Mainte				Part Moved			
	L	Heat Trea	at			Countersink		Mislabe	eled			Positioned W	/rong	_	•
	"	Inspection Strip in Tube				Cut Too Short	ľ	Misread	1			Power Loss/S	Surge	1	Other

Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Torque Waves in Extrusion

Drill Holes

Drawing

Finish

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

Wednesday, August 21, 2013 11:41:45 AM

Work Order ID: 105834

105834

Parent Item:

D3190-1

D3190-1

Parent Item Name:

Chaffing Shield

Start Date: 8/21/2013

Required Date: 8/28/2013

Page 1

JM13-09-27

Start Qty: 10.00

Required Qty: 10.00

Comments:

IPP A03.05.26New issueKJ/RF

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Primary Item Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S25GA		Purchased	No		100	sf	0.0000	0.2153	- 2.2663 16	-		

M3045 24GA

125771

NCR:	Yes	/	No
------	-----	---	----

DQA: Date:

NCR: Y	es / No				WORK ORDER NON-C	LONFOR	WANCE / UP	ZDATE	QA Closed:	Date	:
Work Orde	r:				DISPOSITION			AGAINST DE	PARTMENT	/PROCESS	
Part N					Rework Scrap		Skid-tube Machining	Crosstube Small Fab	4	Water Jet d. Eng. Coor.	Engineering Quality
				Use-as-is Work Order Update	Iner	moforming Large Fab	Finishing Composite	Rec/Stol	re/Packaging Supplier	Other	
Root					ption of work order update	Initial	1	ction	Sign &		
Cause	Date	Step	Qty		or Non-conformance	Chief Eng	Desc	cription	Date	Verification	QC Inspector
Ooc/Data quip/Tooling		-	,					,			
Operator											
Material [.,,	
etup [,	
Other								0			
rocess		1									
Supplier											
raining					,		,				
Jnapproved				-							1
		.			F.	AULT CATE	GORY				
Landin	g Gear			_	General			_	7		- -j
ļ	Bending				Bend	Grain			Ovalized	_	Pressure/Forced
ļ	⊣	ot Conce	ntric to	o/s	BOM/Route	Hardw			Over/Under	 	Temperature/Cure
	Cracks			<u> </u>	Broken/Damaged	\vdash	tion Incomplete		Part Incorred	<u> </u>	Weld
		/Crimped		 	Burrs	 -	tions Incomplete/	/Unclear	Part Lost/Mi	ssing	Wrong Stock Pulled
	Cuffs			<u> </u>	Contamination	—	enance	<u></u>	Part Moved		
	Heat Tre	at		_	Countersink	Mislab		<u></u>	Positioned V		٦ -
]	_	on Strip in	Tube		Cut Too Short	Misrea	d ·		Power Loss/	Surge	Other
	Ripples i			<u></u>	Drill Holes	Offset					
]	—	Waves in I		ո	Drawing	\vdash	Calibration				
	Turning	Sequence		L	Finish	Out of	Sequence				
	Wave/T	vist in Tul	эе		Folio	Outsid	e Dimensions				

DART AEROSPACE LTD	Work Order:	105834
Description: Chafing Shield	Part Number:	D3190-1
Inspection Dwg: D3190 Rev: A		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
9.25	+/-0.030	9.358"	-		V	Jknoi
3.13	+/-0.030	3.136"			V	
0.020	+/-0.010	9.358" 3.136" 0.023"	1		V	
					,	
			·			
						,
	-			·		

		DAS		
Measured by: Jm	Audited by:	27 સ્ક્રજ	Preliminary Approval:	
Date: 13-09-27	Date:	13927	Date:	

Rev	Date	Change	Revised by	Approved
$\overline{}$	10.04.07	New Issue	KJ KJ	Add

		DQA:	Date:	
JCR. Ves / No	WORK ORDER NON-CONFORMANCE / LIPDATE			

		, ,,,						•			QA Closed:	Date	•
Work Order:						DISPOSITION	AGAINST DEPARTMENT/PROCESS						
Part N		-	,			Rework Scrap		Skid-tube Crosstube Machining Small Fab			Water Jet Prod. Eng. Coor.		Engineering Quality
NCR I	No					Use-as-is Thermoforming Finishing Work Order Update Large Fab Composite			~ —	Rec/Store/Packaging Other Supplier			
Root					Descri	ption of work order update	l	nitial	Ac	tion	Sign &		
Cause	se Date Step Qty		(or Non-conformance C		ief Eng	ef Eng Description		Date	Verification	QC Inspector		
Doc/Data												·	
Equip/Tooling													
Operator					* .								
Material					•								
Setup													
Other													
Process													
Supplier							1						
Training							1						
Unapproved				<u> </u>									
					····		AUL	T CATE	GORY				
Landi					_	General		İ		_	7		¬
	—	Bending				Bend	\vdash	Grain			Ovalized	ļ	Pressure/Forced
	-	entre No	t Concer	ntric to	o/s	BOM/Route	\vdash	Hardware			Over/Under	-	Temperature/Cure
	$oldsymbol{oldsymbol{ ext{H}}}$	racks			<u> </u>	Broken/Damaged	\vdash	Inspection Incomplete			Part Incorred	}	Weld
	-	rushed/0	Crimped		_	Burrs	-	Instructions Incomplete/Unclear			Part Lost/Mi	ssing	Wrong Stock Pulled
	-	uffs			_	Contamination	-	Maintenance			Part Moved		
	—	leat Trea			<u> </u>	Countersink	-	Mislabeled			Positioned Wrong		٦
	Inspection Strip in Tube			Tube	_	Cut Too Short	\blacksquare	Misread			Power Loss/	Surge	Other
	—	lipples in			_	Drill Holes	_	Offset					
ļ	Torque Waves in Extrusion				n _	Drawing	\vdash		Calibration				
1						Finish		Out of 9	Seauence				i

Outside Dimensions

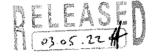
Wave/Twist in Tube

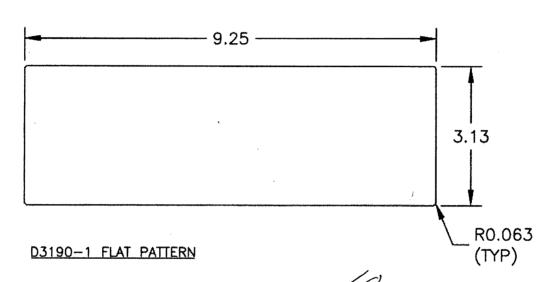
H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

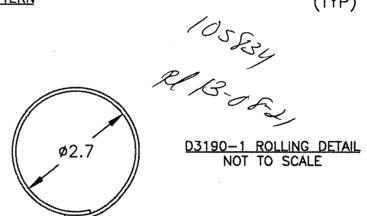




DESIGN	DRAWN BY	DART AEROSP, HAWKESBURY, ONTARI	
CHECKED	APPROVED	DRAWING NO. D3190	REV. A SHEET 1 OF 1
DATE		TITLE	SCALE
03.05.16		CHAFING SHIELD	1:2
 Α	03.05.16	NEW ISSUE	







D3190-1 CHAFING SHIELD

- 1) MATERIAL: AISI 304/316 SS 0.020" THICK (REF. DART SPEC M304S25GA)
- 2) FINISH: NONE
- 3) DEBURR/BREAK ALL SHARP EDGES 0.005 TO 0.010
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

NCR: \	/es	/. No					WORK ORDER NON-O	100	VFOR	MANCE / UPD	DATE	04611	D-1-		
						_		1				QA Closed:	Date	•	
Vork Order:						DISPOSITION		AGAINST DEPARTMENT/PROCESS							
						Rework	1		Skid-tube	Crosstube	٦	Water Jet	Engineering		
I							<u></u>	1		Machining	Small Fab	Pro	d. Eng. Coor.	Quality	
Part No. Scrap							Use-as-is	1	Thermoforming Finishing			_	e/Packaging	Other	
NCR N	io.						Work Order Update	1	1110111	Large Fab	Composite	1	Supplier	1 July 1	
No. 110.								·						J	
Root Descrip					crip	ption of work order update		nitial Action		Sign &					
Cause		Date	Date Step Qty			o	r Non-conformance	Ch	Chief Eng Description		Date	Verification	QC Inspector		
oc/Data								T							
quip/Tooling															
perator															
laterial										i I				·	
etup					İ										
ther															
rocess					1										
upplier															
raining															
napproved			l		<u> </u>										
							· · · · · · · · · · · · · · · · · · ·	AUL	T CATE	GORY					
Landi	_	I	~				General	_	1		_	7	_	- 1.	
	_	Bending					Bend	-	Grain			Ovalized	<u> </u>	Pressure/Forced	
	-	Centre Not Concentric to O/S					OM/Route		Hardware			Over/Under tolerance Temperature/Cure			
	_	Cracks					Broken/Damaged			spection Incomplete		Part Incorrect		Weld	
	\vdash	Crushed/Crimped				_	Burrs	<u> </u>		ructions Incomplete/Unclear		Part Lost/Missing Wrong Stock Pulled			
		Cuffs					Contamination	 		Maintenance			Part Moved		
		Heat Treat					Countersink	 		Mislabeled			Positioned Wrong Power Loss/Surge Other		
	Inspection Strip in Tube				<u> </u>	Cut Too Short			Misread			Surge	Other		
	Ripples in Bend				<u> </u>	Drill Holes	Offset								
	Torque Waves in Extrusion					<u> </u>	Drawing	\vdash	i	Calibration					
	Turning Sequence						Finish	\vdash	1	Sequence				· .	
Wave/Twist in Tube				1	Folio		Outside	Dimensions			6				

DQA:

Date:

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Wave/Twist in Tube